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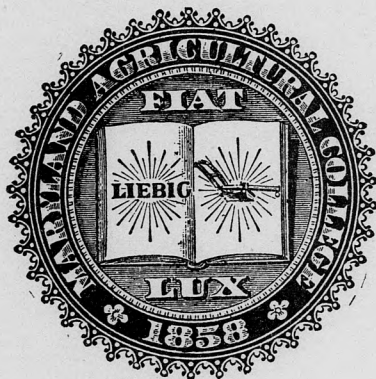
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FEED STUFF ANALYSES.

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Edited by H. B. McDONNELL, Professor of Chemistry.



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ADDRESS

Chemical Department, Maryland Agricultural College,
COLLEGE PARK, MD,

ANALYSES OF COMMERCIAL FEEDING STUFFS SOLD IN MARYLAND

BY THE CHEMICAL DEPARTMENT OF

THE MARYLAND AGRICULTURAL COLLEGE

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This bulletin contains the results of analysis of feeding stuffs made in this laboratory from July to November, 1909, inclusive.

The arrangement is in alphabetical order of manufacturers.

These analyses are made for inspection purposes—to see that the most valuable feed constituents are present in the amounts guaranteed, and to detect adulteration. It is not possible, within the scope of this series of bulletins, to give directions in regard to the use of feeds and treat of the feeding of farm animals. This information is available from other sources. We would recommend that those interested send to the "Secretary of Agriculture, Washington, D. C.," for the following "Farmers' Bulletins." They are sent free: No. 22, "The Feeding of Farm Animals;" No. 49, "Sheep Feeding;" No. 100, "Hog Raising in the South;" No. 170, "Principles of Horse Feeding;" No. 287, "Poultry Management;" No. 346, "The Computation of Rations for Farm Animals;" No. 357, "Methods of Poultry Management."

The following numbers of the same series each contain one or more short articles in regard to feeds and feeding, giving, in brief, some of the work done at the various Experiment Stations: Nos. 73, 97, 107, 119, 144, 162, 169, 186, 202, 222, 225, 233, 244, 251, 259, 273, 305, 316, 317, 320, 334 and 381.

Crude fibre is nature's filler in feed, it is of little value for nutrition. The manufacturer's guarantee on *fibre* should be the *maximum* to be expected, while for *protein* and *fat* the guarantee should be the *minimum*.

This department wishes to have the co-operation of feeders and dealers in the inspection of concentrated feeds, and will be glad to analyze samples, provided samples of the same feed have not been recently analyzed in the department. Before sending samples, write for blanks and instructions. We cannot undertake to analyze samples of medicines, "condition powders," condimental feeds, or the so-called "feeds" that are "five feeds for a cent" to be mixed with the regular feeds. Careful experiments at a number of the Experiment Stations have proved that these medicinal "feeds" are of no practical value.

The examination of the common feeds, as bran, middlings, corn meal, etc., will generally be limited to a microscopical examination for adulteration, as the slight variation in the chemical composition of the pure articles will not justify the expense of making a regular chemical analysis.

Concentrated feeding stuffs are generally by-products and the analysis of any one of them will vary some, depending on the method of preparation, etc.

The following should be the minimum analysis of the feeds named, and are given for comparison:

	PROTEIN.		FAT:	CRUDE FIBRE (Usual Limits.)
	40	Per Cent.	8 to 9 Per Cent.	6 to 8 Per Cent.
Cotton Seed Meal.....	40	Per Cent.	8 to 9 Per Cent.	6 to 8 Per Cent.
Linseed or Flax Seed Meal—Oil	35	"	7	8 to 9
Cake Meal.....	33 to 36	"	2	1½ to 2½
Gluten Meal.....	25	"	3	7 to 9
Gluten Feed.....	23	"	10	
Germ Oil Meal.....	23	"	1 to 2	12 to 14
Malt Sprouts.....	20	"	3	10 to 12
Dried Brewers' Grains.....	17 to 18	"	5	4 to 7
Wheat Middlings.....	15	"	4 to 5	9 to 11
Wheat Bran.....	11 to 12	"	4 to 5	8 to 11
Ground Oats.....	9 to 11	"	3 to 5	1 to 2½
Corn Meal.....	3 to 5	"	1 to 1½	35 to 40
Oat Straw.....	3 to 4	"	1 to 1½	28 to 32
Oat Hulls.....	2 to 3	"	½ to 1	30 to 33
Corn Cobs.....	40	"	10	½ to 1
Meat and Bone Meal.....	60	"	10	½ to 1
Meat Meal.....				

It should be remembered that the analysis does not indicate the palatability of the feed, or if it is musty, moldy or sour. These conditions are generally easily recognized by simple inspection—the appearance, odor, etc., or by the animals refusing the feed. Moldy corn is frequently kiln-dried, and, while this prevents further growth of the mold, it does not restore the feed to prime condition. It is not relished by animals, and is unwholesome. It is false economy to use damaged feed, even if the feed is "cheap."

ANALYSIS OF FEEDING STUFFS.

No.	Name of Manufacturer or Agent.	Name of Feeding Stuffs.	Place of Sampling.	Protein.		Fat or Ether Extract.		Crude Fibre.	
				Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
19869	American Alfalfa Food Co., Wichita, Kansas.	Acme Dairy Food.....	Hagerstown...	13.43	17.62	3.71	3.29	7.83	12.49
19870	American Alfalfa Food Co., Wichita, Kansas.	Acme Horse Feed.....	Hagerstown...	11.93	14.75	3.76	3.41	11.60	10.52
19850	American Linseed Co., New York, N. Y.	Old Process Oil Meal...	Baltimore.....	35.54	32.36	5.45	5.70	7.44	5.50
19866	American Milling Co., Chica- go, Ill.	Sucrene Dairy Feed....	Middleburg....	17.46	16.50	4.75	3.50	12.30	.....
19871	American Milling Co., Chica- go, Ill.	Sucrene Horse and Mule Feed.	Hagerstown...	8.07	10.00	3.14	3.00	8.96	13.50
19927	American Sugar Co., (Larrowe Milling Co., Detroit, Mich.)	Dried Beet Pulp.....	Baltimore.....	8.25	8.00	1.61	.50	10.07	.....
19922	E. Armacost, Baltimore, Md.	Horse Feed.....	Baltimore.....	10.27	.....	4.51	.....	4.89	.....
19856	Blatchfords Calf Meal Fac- tory, Waukegan, Ill.	Calf Meal.....	Baltimore.....	27.29	25.00	5.63	5.00	5.03	.....
19847	J. Bolgiano & Son, Baltimore, Md.	Square Deal Chick Food.	Baltimore.....	9.92	10.01	3.02	3.89	1.44	.....
19885	J. Bolgiano & Son, Baltimore, Md.	Square Deal Pigeon Food.	Baltimore.....	11.93	11.00	3.16	4.44	1.95	.....
19920	J. Bolgiano & Son, Baltimore, Md.	Square Deal Poultry Food.	Towson.....	9.74	11.30	3.82	3.87	2.23	.....
19886	Charles Bowers, Baltimore, Md.	Chicken and Pigeon Feed.	Baltimore.....	14.04	.....	4.54	.....	3.68	.....
19928	Bowers & Dell, Baltimore, Md.	Crushed Flax Seed.....	Baltimore.....	21.50	.....	36.60	.....	2.73	.....
19874	Jno. J. Buffington & Co., Bal- timore, Md.	Buff Chick Feed.....	Baltimore.....	9.92	10.00	2.52	3.00	2.45	5.00
19875	Jno. J. Buffington & Co., Bal- timore, Md.	Buff Scratch Feed.....	Baltimore.....	10.53	10.00	2.88	3.00	2.72	4.00
19903	Central Feed Co., Baltimore, Md.	Chick Feed.....	Baltimore.....	9.65	.....	4.49	.....	2.53	.....
19904	Central Feed Co., Baltimore, Md.	Cracked Bone.....	Baltimore.....	26.41	.....	1.27	.....	.....	.....
19905	Central Feed Co., Baltimore, Md.	Scratch Feed.....	Baltimore.....	9.65	.....	2.82	.....	.....	.....
19887	Louis Cohen, Baltimore, Md.	Chicken and Pigeon Feed.	Baltimore.....	9.04	.....	0.08	.....	1.69	.....
19888	Louis Cohen, Baltimore, Md.	Pigeon Feed.....	Baltimore.....	16.50		4.40		5.70	

ANALYSES OF FEEDING STUFFS.

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19904	Md. Central Feed Co., Baltimore,	Cracked Bone.....	Baltimore.....	26.41		1.27			
19905	Md. Central Feed Co., Baltimore,	Scratch Feed.....	Baltimore.....	9.55		2.82			
19887	Md. Louis Cohen, Baltimore, Md.,	Chicken and Pigeon Feed.....	Baltimore.....	9.04	.....	0.08	.....	1.69	.....
19888	Louis Cohen, Baltimore, Md.,	Pigeon Feed.....	Baltimore.....	16.50	.....	4.40	.....	5.70	.....
19893	Corno Mills Co., St. Louis, Mo.	Corno Horse and Mule Feed.....	Baltimore.....	11.93	10.00	3.57	3.05	14.48	12.00
19923	Corno Mills Co., St. Louis, Mo.	Nitro Chick Feed.....	Baltimore.....	10.27	10.00	2.78	3.50	2.23	3.40
19910	Cover Supply Co., Baltimore, Md.	C. S. C. Feed.....	Baltimore.....	10.35	.....	4.23	.....	3.34	.....
19911	Cyphers Incubator Co., Buf- falo, N. Y.	Chick Food.....	Baltimore.....	10.88	10.54	3.24	3.40	2.38	.....
19912	Cyphers Incubator Co., Buf- falo, N. Y.	Developing Food.....	Baltimore.....	11.14	10.90	2.76	3.00	1.71	.....
19913	Cyphers Incubator Co., Buf- falo, E. Y.	Forcing Food.....	Baltimore.....	13.16	12.89	3.59	3.80	4.06	.....
19914	Cyphers Incubator Co., Buf- falo, N. Y.	Laying Food.....	Baltimore.....	17.72	17.31	4.00	3.80	3.92	.....
19915	Cyphers Incubator Co., Buf- falo, N. Y.	Pigeon Food.....	Baltimore.....	12.72	10.00	4.18	3.00	2.68	.....
19916	Cyphers Incubator Co., Buf- falo, N. Y.	Scratching Food.....	Baltimore.....	11.06	11.05	3.50	3.00	2.69	.....
19876	Darling & Co. Long Island City, N. Y.	Beef Scraps for Poultry.	Baltimore.....	57.93	55.00	12.44	5.00	.86	3.00
19894	Wm. H. Dietz, Baltimore, Md.	Corn and Oat Feed.....	Baltimore.....	10.62	.....	4.37	.....	5.98	.....
19895	Wm. H. Dietz, Baltimore, Md.	Hen Food.....	Baltimore.....	9.74	.....	3.71	.....	2.82	.....
19867	Dewey Bros. Co., Blanchester, Ohio.	Distillers Dried Grain..	Union Bridge..	26.76	30.00	15.19	12.00	8.59	.....
19881	Sam'l J. Diggs & Son, Balti- more, Md.	Alfalfa Feed.....	Baltimore.....	11.32	.....	3.70	.....	15.43	.....
19863	F. J. Downey, Sandy Spring, Md.	Cracked Corn.....	Sandy Spring..	8.95	.....	4.66	.....	1.74	.....
19902	J. M. Frisch & Co., Ballimore,	King Corn & Oats Feed.	Baltimore.....	8.16	8.00	4.31	4.00	10.47	.....
19906	J. J. George & Co., Balti- more, Md.	Red X Chick Starter....	Baltimore.....	11.23	9.38	3.09	5.78	1.49	1.03
19907	J. J. George & Co., Balti- more, Md.	Red X Dry Mash for Poultry.....	Baltimore.....	20.88	21.38	6.38	6.00	6.36	10.88
19930	J. J. George & Co., Balti- more, Md.	Red X Poultry Feed....	Baltimore.....	8.60	5.69	3.86	4.56	4.94	8.10
19908	J. J. George & Co., Balti- more, Md.	Red X Scratch Feed....	Baltimore.....	8.42	5.69	3.40	4.56	2.17	3.10
19868	Great Western Cereal Co., Chicago, Ill.	Boss Chop Feed.....	Crisfield.....	9.30	10.00	4.50	4.00	8.40	.....
19931	Great Western Cereal Co., Chicago, Ill.	Sterling Scratch Feed..	Baltimore.....	10.44	11.00	3.52	3.00	2.77	6.00
19851	H-O-Co., Buffalo, N. Y.....	Jim Dandy Oat Feed....	Baltimore.....	7.81	7.50	2.88	2.75	23.25	.....

ANALYSIS OF FEEDING STUFFS.

No.	Name of Manufacturer or Agent.	Name of Feeding Stuff.	Place of Sampling.	Protein.		Fat or Ether Extract.		Crude Fibre.	
				Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
19917	Wm. Hopps, Grain Co., Baltimore, Md.	Mixed Feed.....	Baltimore.....	11.85	.....	4.51	.....	5.02	.....
19924	H. B. Hull & Co., Baltimore, Md.	Ground Feed.....	Baltimore.....	10.71	.....	3.82	.....	4.44	.....
19861	W. T. Hutchins & Co., Baltimore, Md.	Matchless Chick Feed..	Baltimore.....	6.84	7.90	2.17	3.21	1.07	1.22
19862	W. T. Hutchins & Co., Baltimore, Md.	Matchless Poultry Feed.	Baltimore.....	8.95	8.34	3.20	3.26	1.61	1.50
19918	Jackson & Jenkins, Dover, Del.	Blue Hen Chicken Feed.	Baltimore.....	38.96	65.00	13.99	4.00	.56	.....
19889	T. Kellum & Co., Baltimore, Md.	Chick Feed.....	Baltimore.....	12.55	.....	5.24	.....	5.77	.....
19929	Kornfalfa Feed Milling Co., Kansas City, Mo.	Corn Alfalfa Feed.....	Baltimore.....	10.53	12.00	3.43	4.00	10.51	11.00
18898	Kratz & Matthews, Baltimore, Md.	Faultless Brand Chick Feed.	Chick Baltimore.....	7.28	9.86	2.36	3.94	1.26	1.32
19899	Kratz & Matthews, Baltimore, Md.	Faultless Brand Chick Starter.	Chick Baltimore.....	8.60	9.30	3.77	4.22	1.06	1.76
19900	Kratz & Matthews, Baltimore, Md.	Faultless Brank Pigeon Feed.	Baltimore.....	9.83	10.00	3.36	4.20	1.42	1.52
19901	Kratz & Matthews, Baltimore, Md.	Faultless Brand Scratch Feed.	Baltimore.....	8.95	9.24	3.05	3.52	1.37	1.60
19883	F. Magenhardt, Baltimore, Md.	Horse Feed.....	Baltimore.....	9.48	.....	4.81	.....	5.30	.....
19925	Michigan Sugar Co., Bay City, Mich.	Dried Beet Pulp.....	Baltimore.....	9.39	9.00	1.18	.40	12.11	.....
19858	Milwaukee Grain & Feed Co., Milwaukee, Wis.	Electric Stock Feed....	Hyattsville....	15.01	14.00	3.02	2.00	9.85	10.00
19859	E. P. Mueller, Norfolk, Va...	Molasses Grains.....	Hyattsville....	10.88	10.00	2.57	3.50	13.77	12.00
19848	North-West Mills Co., Winona, Minn.	Sugarota Dairy Feed....	Annapolis.....	15.45	18.00	6.05	4.50	17.63	.....
19849	North-West Mills Co., Winona, Minn.	Sugarota Horse Feed....	Annapolis.....	11.23	12.00	4.74	3.50	16.56	.....
19890	Pennsylvania Primo Feed Co., Harrisburg, Pa.	Matchless Egg Maker...	Baltimore.....	11.32	13.50	5.16	6.00	2.95	3.00
19891	Pennsylvania Primo Feed Co., Harrisburg, Pa.	Primo Sylva Scratch Feed.	Baltimore.....	9.74	10.06	3.84	3.41	2.45	1.78
19865	Quaker Oats Co., Chicago, Ill.	Calf Meal.....	Elkton ..	18.69	19.00	8.61	8.00	2.87	3.00
19921	Quaker Oats Co., Chicago, Ill.	Schumacher Special Horse Feed.	Baltimore.....	9.04	9.25	3.02	3.50	7.33	

ANALYSES OF FEEDING STUFFS.

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19891	Harrisburg, Pa. Pennsylvania Primo Feed Co., Harrisburg, Pa.	Primo Sylva Scratch Feed.	Baltimore.....	9.74	10.06	3.84	3.41	2.45	1.78
19900	Quaker Oats Co., Chicago, Ill.	Calif Meal.....	Baltimore.....	18.69	19.00	8.51	8.00	2.97	3.00
19921	Quaker Oats Co., Chicago, Ill.	Schumacher Special Horse Feed.	Baltimore.....	9.04	9.25	3.02	3.50	7.33	.....
19873	Quaker Oats Co., Chicago, Ill.	Schumacher Stock Food.	Woodsboro....	10.97	10.00	4.82	4.00	10.32	.....
19853	Ralston Purina Co., St. Louis, Mo.	Purina Feed.....	Baltimore.....	11.76	14.00	4.02	5.00	11.94	.....
19852	Ralston Purina Co., St. Louis, Mo.	Purina Mill Feed Chick Size.	Baltimore.....	11.03	11.00	4.46	3.60	3.21	4.00
19909	Ralston Purina Co., St. Louis, Mo.	Purina Mill Feed Mash Size.	Baltimore.....	17.38	17.00	2.40	2.50	8.60	11.05
19880	Ralston Purina Co., St. Louis, Mo.	Purina Scratch Size....	Baltimore.....	11.02	11.00	3.38	3.60	2.83	.....
19882	H. M. Rever & Co., Baltimore, Md.	Horse Feed.....	Baltimore.....	9.65	.....	4.10	.....	3.95	.....
19877	Wm. G. Scarlett & Co., Balti- more, Md.	Oriole Poultry Feed....	Baltimore.....	12.81	11.67	4.98	3.37	4.75	4.50
19878	Wm. G. Scarlett & Co., Balti- more, Md.	Shield Chick Feed.....	Baltimore.....	12.20	12.14	3.33	3.97	3.14	5.00
19854	C. S. Schermerhorn & Son, Baltimore, Md.	Old Process Oil Meal....	Baltimore.....	33.96	31.50	7.02	7.00	7.70	10.00
19855	C. S. Schermerhorn & Son, Baltimore, Md.	Prime Cotton Seed Meal.	Baltimore.....	39.93	42.00	7.26	7.00	8.95	.....
19896	Shredded Wheat Co. Niagara Falls, N. Y.	Shredded Wheat Waste.	Baltimore.....	10.97	10.00	1.76	1.50	2.18	2.00
19897	P. Singleton & Bro., Balti- more, Md.	Horse Feed.....	Baltimore.....	9.56	.....	4.83	.....	4.75	.....
19932	Southern Cotton Oil Co., Char- lotte, N. C.	Bonita Brand Cotton Seed Meal.	Baltimore.....	37.21	38.00	8.24	6.00	10.73	10.00
19926	Southern Fibre Co., Ports- mouth, Va.	Cotton Seed Hulls.....	Baltimore.....	7.63	.....	1.48	.....	29.57	.....
19872	Southern Fibre Co., Ports- mouth, Va.	Prime Cotton Seed Feed.	Frederick.....	7.55	10.00	1.65	1.80	31.86	35.00
19844	Sugarine Co., Chicago, Ill....	Sugarine Dairy Feed....	Colara.....	16.67	16.50	6.35	3.50	9.81	12.00
19879	Swift & Co., Kearny, N. J....	Disgester Tankage.....	Easton.....	53.37	60.00	14.50	8.00	2.93	.....
19860	Swift & Co., Kearny, N. J....	Special Meat Scraps....	Baltimore.....	51.79	55.00	11.50	5.00	2.22	.....
19919	Wm. Trager & Co., Baltimore, Md.	Mixed Feed.....	Baltimore.....	11.14	.....	5.16	.....	4.11	.....
19857	Washington Brewing Co., Washington, D. C.	Dried Brewers Grains...	Baltimore.....	22.82	25.00	7.65	7.00	15.59	13.00
19884	Ed. Weitzel Bros., Baltimore, Md.	O. C. Feed.....	Baltimore.....	10.27	.....	5.15	.....	6.61	.....
19892	Rich'd C. Wells & Co., Balti- more, Md.	O. C. Feed.....	Baltimore.....	10.79	.....	5.09	.....	6.55	.....
19864	Western Grain Products Co., Hammond, Ind.	Hammond Dairy Feed....	Lime Kiln.....	15.01	17.00	4.89	3.00	9.89	.....

TO FEED MANUFACTURERS AND DEALERS.

The attention of manufacturers and dealers is requested to the following provisions of the Feed-Stuff Law:

Sec. 84. Every manufacturer, company or person who shall sell, offer or expose for sale or for distribution in this State any concentrated commercial feeding stuff as defined in the following section of this sub-title, used for feeding farm live stock and poultry, shall affix to every package of such feeding stuff, in a conspicuous place, on the outside thereof, a plainly printed statement, clearly and truly certifying the number of net pounds in the package sold or offered for sale, the name or trade-mark under which the article is sold, the name of the manufacturer or shipper, the place of manufacture, the place of business, the source of the food principles, and a chemical analysis stating the percentage of crude protein, allowing one per cent. of nitrogen to equal six and one-fourth of protein, and of crude fat it contains. * * * * *

Sec. 85. The term concentrated commercial feeding stuff, as here used, shall not include hays and straws, the whole seeds nor the unmixed meals made directly from the entire grains of wheat, rye, barley, oats, Indian corn, buckwheat and broom corn. Neither shall it include wheat, rye and buckwheat brans or middlings, not mixed with other substance, but sold separately, as distinct articles of commerce, nor pure grain ground together. The agent of the State hereinafter authorized to make those inspections, is fully empowered to take samples of these excepted articles when found, and, if upon analysis, they prove to be adulterated, the vender shall be in all respects subject to the penalties hereinafter set forth for the adulteration of concentrated commercial feeding stuff.

Sec. 86. The term concentrated commercial feeding stuff, as here used, shall include linseed meals, cotton-seed meals, cotton-seed hulls, pea meals, cocoanut meals, gluten feeds, maize feeds, starch feeds, sugar feeds, dried brewer's grains, malt sprouts, hominy feeds, cere-line feeds, rice meals, oat feeds, corn and oat chops, ground beef, fish or animal meals, mixed feeds, all patented or trade-marked foods and all other materials of similar nature not included within the preceding Section of this sub-title.

Sec. 88. Before any concentrated commercial feeding stuff, as defined in Section eighty-six of this Act is sold, offered or exposed for sale in this State, the manufacturer, importer, agent or seller thereof shall pay to the Treasurer of the Maryland Agricultural College an inspection fee of twenty dollars for each brand or kind of concentrated commercial feeding stuff contemplated to be sold, and shall receive therefor from said treasurer a license to sell such brand of concentrated commercial feeding stuff until the first day of July next following; provided that when any manufacturer, importer or dealer shall have paid the inspection fee as herein provided, it shall not be necessary for any other person, as his agent or representative, to pay said fee.

Feed dealers should see that the "concentrated feeds" they handle have been properly licensed by the manufacturers, and that the packages are properly marked.

The law requires that "concentrated feeds" include in the guarantee on the packages the "source of the food principles."

Copies of the law in full will be supplied on application.